

REMARKS

This Amendment responds to the Decision on Appeal of the Board of Patent Appeals and Interferences (hereinafter Board Decision) dated October 29, 2008.

The applicant has amended claim 40, from which each of the remaining claims respectively depends. A careful reading of the Board Decision, which affirmed the Examiner's rejection of all pending claims under 35 U.S.C. § 103(a) as being obvious in view of respective combinations that each included Ichihara et al., U.S. Patent No. 5,198,853 (hereinafter Ichihara) and Feng et al., U.S. Patent No. 6,046,828 (hereinafter Feng), indicates that amended claim 40 patentably distinguishes over the cited prior art.

When appealing the Examiner's rejection of the previously-presented claim 40, the applicant argued that the limitation in claim 40 of "a variable luminance threshold value automatically calculated using one or more statistical measures and that causes detection of shadows cast by said object on said backing" was not obvious in view of the combination of Ichihara and Feng. Specifically, the applicant argued that the Examiner's previous rejection had alleged that one of ordinary skill in the art would have found it obvious to incorporate an variable luminance threshold of Feng, which was automatically calculated using specified statistical measures, into the teachings of Ichihara. Ichihara, in turn, taught the desirability of detecting the shadow of an edge of a document cast upon a backing. The applicant had argued that this rejection was improper because the statistical measures used by Feng to calculate a variable threshold value would be useless in detecting a shadow of a document on a backing, as taught by Ichihara.

In response, the Board decision stated that it viewed the Examiner's rejection as merely drawing from Feng a generic teaching to automatically calculate a variable threshold (*See* Board Decision at p. 6), and that this teaching was sufficient to affirm the Examiner's rejection because Ichihara itself taught the claimed variable threshold calculated using a statistical measure, as exemplified by a probability distribution at Ichihara col. 7 lines 40-44 and col. 11 lines 30-55. The Board decision also indicated that Ichihara further disclosed automatically calculating the threshold value disclosed therein, and that claim 40 was therefore anticipated by Ichihara.

For the record, the applicant disagrees with the conclusion in the Board Decision that "the Examiner is not suggesting the bodily incorporation of the standard deviation statistical measurement described in the document edge determining system of Feng into the system of Ichihara." *See* Board Decision at p. 6. In fact, the Examiner's rejection of many claims expressly relied upon the standard deviation measurements of Feng as a substitute for the statistical measures of Ichihara, which as conceded by the Examiner, were not used to determine the value of Ichihara's threshold. *See, e.g.*, Office Action dated August 30, 2006 at pp. 2-3 ("Feng does indeed automatically calculate a variable luminance threshold using one or more statistical measures [as] mean and standard deviation values are used to determine the edges and width of the document to be scanned." Furthermore, the Board Decision itself expressly relied upon a bodily incorporation of Feng's standard deviation into the technique of Ichihara when upholding the Examiner's rejection of claim 24, without first addressing the applicant's arguments that such an incorporation would be of no utility in the method of Ichihara. *See* Board Decision at p. 8 ("We agree with the Examiner . . . that, *in Feng*, the threshold value [determined for] a document with a size that has a detectable boundary will be different from a document with a

size that covers or extends past the end of the scanner.”). Finally, the Examiner’s answer *explicitly contradicts* the interpretation of the Board Decision at p. 3. (“Ichihara does not disclose expressly that said variable luminance threshold is automatically calculated *using one or more statistical measures*.”) The Examiner thus conceded the applicant’s point in the appeal brief that “the threshold of Ichihara is . . . not calculated using one or more statistical measures.” Because of this concession, the Examiner’s rejection *necessarily had to* bodily incorporate Feng’s statistical measures into the teachings of Ichihara, because Ichihara taught no statistical measures *used to calculate a variable threshold*, automatically or otherwise. Thus, the assertion in the Board Decision that Feng is relevant merely for some generic teaching that a threshold may be automatically calculated is contradicted by the evidence of record.

Therefore, the applicant views the reasoning stated in the Board decision as an alternative grounds of rejection, and in response submits the present amendment. This submission, however, is not intended as an accession of the correctness of the alternative grounds stated in the Board decision. For example, the Board’s contention that the Examiner’s rejection of the pending claims could be upheld under 35 U.S.C. § 102 as being anticipated, given Ichihara’s disclosure that the threshold value used in that reference may be varied automatically, is incorrect given that Ichihara discloses no method of automatically calculating a chosen threshold value, i.e., *Ichihara does not enable the limitation claimed by the applicant*. Rather, Ichihara merely mentions in passing that, although the specific disclosure contemplates a user manually changing the threshold using a ten-key pad, the threshold could *theoretically* be varied automatically. Similarly, and as expressly conceded by the Examiner when responding to applicant’s brief, the statistical measures disclosed in Ichihara are only used *in comparison to* a threshold value, rather

than being used to calculate the threshold value in the first instance, which is what is being claimed. For example, and as argued in more detail below with respect to the applicant's amendment, the probability distribution of Ichihara (cited in the Board Decision at p. 7) is only used to modify a detected luminance variation ratio *to which a threshold is compared*; it is not used in any way to determine the threshold itself. Similarly, the Board Decision notes that the Examiner cited statistical measures taught by Ichihara at col. 7 lines 58-64, but seemingly failed to appreciate that the Examiner was not alleging that these statistical measures were used to calculate a variable threshold. *See Examiner's Answer at 3. ("Ichihara discloses . . . a variable luminance threshold value . . . compared with one or more statistical measures")*(emphasis added); *See also Examiner's Answer at 4. ("Feng discloses automatically calculating a variable luminance threshold using one or more statistical measures.")*(emphasis added). Thus, the Board's implications that (1) the Examiner's rejection could be upheld without bodily incorporating Feng's statistical measures into Ichihara; (2) the disclosure of Feng of statistical measures to automatically calculate a threshold were cumulative to the disclosure of Ichihara; and therefore (3) the Board need not address the specific points of the applicant that one of ordinary skill in the art would not bodily incorporate those statistical measures into Ichihara as they would be useless to the technique of Ichihara, are each unsupported by the record.

In any event, as amended, independent claim 40 recites the limitation of "a variable luminance threshold value automatically calculated using a maximum instance of a plurality of statistical values measured over at least one of a column or row of said array, where said variable luminance threshold value causes detection of shadows cast by said object on said backing." This limitation is not disclosed by Ichihara. The Board decision noted that Ichihara teaches two

statistical measures used in detecting the shadow of a document on a backing – a luminance variation ratio disclosed at col. 7 lines 58-68 and a probability distribution at col. 7 lines 40-44. The disclosed luminance variation ratio, though *compared to* a threshold when detecting shadows cast on a backing, is not used to calculate the threshold value that is used. *See, e.g.,* Ichihara at col. 8 lines 10-14. The probability distribution, in turn, is not a *measure* of any property of the actual document being scanned, but instead, is simply a template stored in memory from which a likelihood can be inferred that a shadow of a document would appear at any given position on a backing. *See, e.g., Id.* at col. 7 lines 40-44. Thus, although Ichihara discloses that the probability distribution should be aligned so that its maximum is respectively aligned with the side edges of standard document sizes, this maximum is not any instance of measured values over the sensor array, nor is the maximum of the probability distribution used in determining the threshold to which the variation ratio is compared. *See, See, e.g.,* col. 2 lines 38-56 and col. 11 lines 30-55 (together indicating that the probability distribution is merely used to eliminate, through a multiplication with the variation ratio, any spikes in the variation ratio due to a soiled platen cover and/or document data). Thus, Ichihara fails to teach the claimed limitation.

Neither does Feng teach this amended limitation. As noted earlier, Feng discloses automatically calculating a variable threshold based on mean and standard deviation values, which is not the claimed “*maximum instance of* a plurality of statistical values measured over at least one of a column or row of said array.” Instead, mean and standard deviations are composite measures of those values.

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Reply to Final Office Action of August 30, 2006

In view of the foregoing amendments and remarks, the applicant respectfully requests reconsideration and allowance of claims 2–15, 17, 18, 20–28, 34 and 40.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'Kurt Rohlf', written over a horizontal line.

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